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ABSTRACT

Much research on sex roles and their correlates characteristically has been performed in laboratory settings with a college student sample. Job analysis interviews were conducted to extend androgyny research to the work setting. Supervisory performance ratings of job activities and Bem Sex-Role Inventory data were obtained for 135 female nurses. A comparison of masculinity and femininity ratings of the job activities resulted in five tasks being classified as "stereotypic feminine" and four as "stereotypic masculine." Findings indicated that the masculine sex role stereotype was relevant to the prediction of job performance for the stereotypic masculine tasks. Generally, prediction of performance for the feminine tasks was not obtained. Evidence was not present for the notion that the concept of androgyny can aid in the prediction of performance in both stereotypically masculine and feminine job activities. (Author)

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Sex Role Identity and the Prediction of Job Performance in Stereotypic Masculine and Feminine Tasks

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Sex Role Identity and the Prediction of Job Performance
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Research in several different areas has generally indicated that the behaviors of men and masculine traits have been judged to be more highly valued than the behaviors of women and feminine traits.

Goldberg (1968) demonstrated this idea in a study of performance evaluation. Goldberg examined female subjects' ratings of the quality of written reports, and concluded that the quality of the reports was judged to be significantly better when the reports were supposedly authored by a man than a woman.

Research on causal attributions of performance also has indicated that performance by a man is judged more favorably than the same performance by a woman. Specifically, successful performance by a male stimulus person has been attributed to skill, while equivalent performance by a female stimulus person has been attributed to luck (Deaux & Emswiller, 1974; Feather & Simon, 1976; Terborg & Ilgen, 1975).

Studies of the selection process have yielded results similar to those of the performance literature. Using male college students and male professional interviewers as subjects, Dipboye, Fromkin, and Wiback (1975) found that résumés attributed to male applicants were more favorably evaluated than the same résumés attributed to female applicants. Similarly, Fidell (1970) concluded that psychology department chairmen judged descriptions bearing the names of male applicants to be suited for higher level Ph.D. faculty positions than the same descriptions bearing the names of female applicants.

The masculine stereotype also has been viewed more favorably than the feminine stereotype. An investigation of clinicians' perceptions of the psycho-

logical health of males and females has indicated that trait descriptions of a healthy adult (sex unspecified) were judged to be more similar to trait descriptions of a healthy man than to trait descriptions of a healthy woman (Broverman, Broverman, Clarkson, Rosenkrantz, & Vogel, 1970).

The relative value of the masculine and feminine stereotypes has been studied in the work setting. Using samples of male and female middle managers, Schein (1973; 1975) has presented data that leads to the conclusion that successful middle managers are perceived to possess characteristics, attitudes, and temperaments more commonly ascribed to men in general than women in general.

A relatively recent conceptualization is that the masculine stereotype and feminine stereotype are not mutually exclusive, but rather are two independent constructs which can be complementary (Bem, 1974; Constantinople, 1973). Out of this conceptualization has grown the hypothesis that individuals who describe themselves in terms of either the masculine stereotype or the feminine stereotype may be limited in the range of behaviors available to them. Whereas, the androgynous person, i.e., the person who provides a self description consistent with both the masculine and feminine stereotype, may be more flexible and highly valued because this type of person can display both stereotypic masculine and feminine behaviors (Bem, 1974; 1975).

Bem (1975), and Bem and Lenny (1976) provided some support for this hypothesis. Bem (1975) had one group of male and female subjects, who were classified as masculine, feminine, and androgynous perform a stereotypic masculine task, and another group of male and female subjects who were likewise classified, perform a stereotypic feminine task. The results indicated that the androgynous subjects of both sexes performed well in both tasks. Other subjects performed in a manner consistent with their sex-typing, except feminine females, who not only showed a deficiency on the masculine task, but also the feminine task.

Generally, the studies which have examined the association between androgyny and effective behavior have been laboratory studies using college students as subjects (e.g., Bem, 1974; Bem & Lenny, 1976). Powell and Butterfield (1979) have attempted to extend androgyny research to the work setting. As in the Schein studies, Powell and Butterfield were interested in perceptions of the successful manager. However, these researchers were interested in whether the successful manager was viewed as masculine, feminine, or androgynous. The results of the study indicated that male and female undergraduate business majors, and part-time MBA students (many of whom held full-time jobs) viewed the successful manager in terms of masculinity rather than in terms of androgyny or femininity.

The purpose of the present study was to again extend androgyny research to the work setting. More specifically, the purpose of the study was to use a field sample and to examine the relationship of self descriptions of masculinity, femininity, and androgyny to performance in job tasks classified as stereotypically masculine or feminine.

Method

Job Analysis

Female registered nurses (N = 30) employed in a southeastern hospital participated in job analysis interviews. The interview was structured to identify job activities performed by registered nurses. The interviews were conducted by four graduate students who summarized the information by writing each job activity identified by the interviewee on an index card. The cards were reviewed for the frequency of occurrence of job activities. The activities mentioned most frequently were then edited for clarity. The number of activities derived from the interviews was 14.

Performance Ratings and the BSRI

Personnel from the same southeastern hospital participated in the next data collection phase of the study. Supervisors rated the effectiveness of the performance of 135 female registered nurses on each of the job activities identified in the job analysis interviews. The supervisor first read the job activity, and then was asked to rate how well she believed the subordinate performed on the activity. Ratings were made on a nine point graphic scale having the anchors: (1) well below average, (5) average, (9) well above average.

The same 135 nurses completed the Bem Sex-Role Inventory (BSRI) (Bem, 1974). The BSRI is a 60 item self report inventory containing 20 masculine, 20 feminine, and 20 neutral items classified in an item analysis by Bem (1974). Each item is responded to on a seven point scale with the anchors ranging from (1) "never or almost never true" to (7) "always or almost always true."

Improvements in the internal consistency of the masculinity and femininity scales were achieved by deleting items to maximize coefficient alpha. The items remaining in the masculinity scale after the alpha analysis were: self reliant, defends own beliefs, independent, assertive, strong personality, forceful, analytical, has leadership abilities, willing to take risks, makes decisions easily, self sufficient, dominant, willing to take a stand, aggressive, acts as a leader, individualistic, competitive, ambitious. These items were summed for each subject to obtain a vector of masculinity scores. The items remaining in the femininity scale after the alpha analysis were: cheerful, affectionate, loyal, sympathetic, sensitive to the needs of others, understanding, compassionate, eager to soothe hurt feelings, warm, tender, loves children, gentle. These items were summed for each subject to obtain a vector of femininity scores. The resulting alphas for the trimmed scales were in the eighties.

Classification of Job Activities

Two groups of undergraduates, each consisting of 15 males and 15 females, rated the job activities identified in the job analysis. One group rated the job activities for the extent to which they considered the activities to be stereotypic masculine behaviors in American society, and the other group rated the job activities for the extent to which they considered the activities to be stereotypic feminine behaviors in American society. These ratings were gathered on a seven point scale with the anchors being: (1) not at all masculine (feminine), and (7) very masculine (feminine).

Before the job activities were rated for masculinity and femininity they were edited to eliminate obvious references to the job title of nurse, and to sex. This editing was performed so that the masculinity and femininity ratings were based on the behavior described by the job activity and not based on the sex of the performer of the job activity.

An activity was classified as stereotypically masculine if it had a significantly higher mean rating on masculinity than on femininity, and an activity was classified as stereotypically feminine if it had a significantly higher mean rating on femininity than on masculinity.

Analysis and Results

The mean masculinity and femininity ratings for each of the job activities were compared with independent groups t-tests. As displayed in Table 1, four of the activities were judged by the samples to be stereotypically masculine, and five were judged to be stereotypically feminine.

Insert Table 1 about here

In the literature two methods for examining the relationship between self descriptions of sex-role stereotyping and variables such as performance have been presented. One method involves treating the masculinity and femininity scores as continuous variables, and analyzing the data with the use of multiple regression techniques (Bem, 1977; Feather, 1978; Helmreich, Spence & Holahan, 1979). The other method involves a typology system where subjects above the median on masculinity and below on femininity are considered masculine; subjects below the median on masculinity and above on femininity are considered feminine; subjects above the median on both masculinity and femininity are considered androgynous; and subjects below the median on both are considered undifferentiated (Helmreich et al., 1979; Spence, Helmreich & Stapp, 1977). Performance is then related to these classifications. In the present study, the data were analyzed with both methods.

Continuous Variable Method

The correlation between the continuous variable masculinity and the continuous variable femininity was $r = .10$ ($N = 134$, n.s.).

The bivariate correlations between the continuous variable masculinity and performance on each of the job activities, and the continuous variable femininity and performance on each of the job activities are shown in Table 2.

Insert Table 2 about here

Three of these correlations were significant ($p < .05$). In these three instances the correlations were between the continuous variable masculinity and performance on a masculine job activity (1M, 2M, 4M). So, when masculinity was treated as a continuous variable, generally, a positive relationship was obtained between describing one's self as masculine and performance on the masculine job activities.

Correlations between the continuous measure of femininity and job performance were nonsignificant in the case of all job activities.

Separate hierarchical multiple regression analyses were performed with each of the job activities being the dependent (Y) variable. The predictor variables in each of these equations were the masculinity score (continuous variable), the femininity score (continuous variable), and a cross product which was formed by multiplying these masculinity and femininity scores for each subject. The first stage of the hierarchical regression analysis included either the masculinity or femininity scores, depending on which had the highest bivariate correlation with the criterion. The second stage included the variable with the smaller correlation with the criterion. The final stage included the cross product vector. When the cross product vector is included last, it represents the interaction or joint relationship of masculinity and femininity with the criterion (Cohen & Cohen, 1975).

These regression analysis results are presented in Table 3. The results show that the measure of masculinity entered the equation first for all the masculine job activities, and for four of the five feminine job activities. The addition of the variable at the second step, and the cross product failed to increase prediction in all of the equations.

Insert Table 3 about here

Typology System

Based on the resulting medians, subjects with scores greater than 91 on the masculinity scale were classified as high in masculinity, and subjects with scores greater than 72 on the feminine scale were classified as high in femininity. Separate dummy coded vectors of ones and zeros were created for the previously described classifications: masculine, feminine, androgynous, and undifferentiated.

Bivariate correlations between each vector and the job performance ratings on each activity were calculated. These correlations are presented in Table 4.

Insert Table 4 about here

The strongest and most consistent pattern of correlations in Table 4 is between the feminine typology and job performance on the masculine activities. Specifically, for all four masculine job activities, significant negative correlations between job performance ratings and the feminine typology were obtained. Thus, subjects who were classified as feminine tended to perform worse on the masculine job activities than those who were not classified as feminine.
The feminine typology variable is composed of variance from two variables. A subject was typed as feminine if she was above the median on femininity (continuous variable), and below the median on masculinity (continuous variable). To explore which continuous variable, masculinity or femininity, was contributing most to the prediction of performance in the masculine job activities, semipartial correlations were calculated between the job performance ratings and the feminine typology variable, first partialling masculinity from the feminine typology then partialling femininity from the feminine typology. The results indicated that for three of the four masculine job activities (1M, 2M, 4M), when masculinity was partialled out, the correlation dropped below significance, while the correlation remained significant when femininity was partialled out. With the remaining job activity (3M) the correlation did not drop below significance when masculinity was partialled out, however, the correlation did drop slightly more when masculinity was partialled out than when femininity was partialled out. The results suggest that the major portion of the variance contributing to the significant negative relationship between job performance in the masculine activities and the feminine typology was associated

with being low in masculinity rather than being high in femininity. So females who did not describe themselves in terms of masculine traits were rated lower in performance on job activities classified as masculine.

A significant positive relationship was obtained between job performance on two of the masculine job activities (3M, 4M) and the androgynous typology. For these two job activities, partialling masculinity out of the androgynous typology resulted in a nonsignificant semipartial correlation, while partialling femininity out of the androgynous typology actually resulted in an increase in the relationship between the job performance rating and the androgynous typology. A similar pattern of semipartial correlations was obtained with the other two masculine job activities (1M, 2M) which initially showed a weaker ($p < .07$) positive relationship with the androgynous typology. With the androgynous typology, the variance due to the masculine variable apparently was contributing the most to the prediction of job performance, while the variance due to femininity was actually depressing the relationship between the androgynous typology and the job performance ratings for the masculine tasks.

Finally for one feminine job activity (4F) there was a significant relationship between the job performance rating and the masculine typology. For one other feminine job activity (5F) there was a somewhat weaker relationship ($p < .06$) between the job performance rating and the masculine typology (see Table 4).

Discussion

In this data, evidence was not present for the notion that the concept of androgyny can aid in the prediction of performance in both stereotypically masculine and feminine job activities. However, performance in the stereotypically feminine job activities was not consistently predicted by any variable in the continuous variable method or the typology system.

For this sample of female nurses, in three of the four masculine job activities, there was a significant positive relationship between job performance ratings and the continuous variable masculinity. Using the typology system, the examination of the semipartial correlations suggest that opposite sex role identity descriptions were relevant to the prediction of job performance in the masculine job activities. For the job activities where performance ratings were predictable from sex role identity variables, generally, the female subjects who did not describe themselves in terms of masculine traits were rated lower in performance, while the female subjects who did describe themselves in terms of masculine traits were rated higher in performance. Future research with samples of males will clarify whether opposite sex role identity or masculine sex role identity is related to success in stereotypically masculine and feminine job activities.

Although performance in all the nurse activities could not be predicted, for the job activities where performance could be predicted, the results have implications similar to those of Schein (1973, 1975), and Powell and Butterfield (1979). Schein, and Powell and Butterfield concluded that the masculine stereotype was related to perceptions of success for persons in the job of manager which is a job traditionally dominated by males. In the present study, the masculine stereotype self descriptions were related to perceptions of success for some job activities of registered nurses, which is a job traditionally dominated by females. So perhaps the standard of success in male and female dominated jobs is the masculine stereotype. This hypothesis, however, needs to be examined in other samples, and jobs.

The results of the present study may not only be interpreted in light of the sex role identity literature, but also in consideration of construct validity. Perhaps the reason for the relationship between performance in the masculine job activities and the masculine stereotype is that successful performance

in the masculine tasks requires instrumental abilities such as decision making, independence, assertiveness, leadership, etc. These instrumental abilities are exactly what is tapped by the masculine construct. As far as the feminine job activities, the expressive abilities tapped by the feminine construct, and the instrumental abilities tapped by the masculine construct simply may not have been relevant to performance.

Finally, several authors (e.g., Bem, 1977; Feather, 1978) have suggested using the continuous variable method and multiple regression techniques rather than the typology system in sex role stereotype research. In the present study, the continuous variable method demonstrated a significant relationship between masculinity and performance in the masculine job activities, while the typology system demonstrated a significant negative relationship between the feminine typology and performance in the masculine job activities. Without the benefit of the semipartial correlations previously described, the two methods may appear to lead to different conclusions. Researchers using the two methods should be aware of this possibility.

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Table 1

Means, Standard Deviations, and t-values for Job Activities Classified as Masculine and Feminine

Job Activities		Femininity Rating		Masculinity Rating		t-value
Job Activities Classified Masculine		$\bar{X}$	S.D.	$\bar{X}$	S.D.	
1 M	When old symptoms change, or new symptoms appear, it is necessary to evaluate the situation and decide whether a physician should be called or other emergency action should be taken.	3.10	1.35	3.87	1.46	-2.12*
2 M	Supervisors are responsible for: passing information to their staff members that has come from higher administration sources, and explaining changes in hospital policy and procedure to them.	2.93	1.64	4.80	1.34	-4.82**
3 M	On days when the unit is short-staffed or over-worked, it is necessary to make decisions regarding the priorities of jobs, and whether to ask for assistance from other units.	3.57	1.43	4.73	1.31	-3.29**
4 M	Solving problems or making decisions on the job.	2.80	1.32	4.87	1.41	-5.86**
Job Activities Classified as Feminine						
1 F	In working with others (for example, co-workers or people in other departments--like pharmacy) it is necessary to be able to sense their moods and to work cooperatively with them rather than having a hostile or aggressive relationship.	4.34	1.61	3.37	1.45	2.45*
2 F	When there are a number of visitors with a patient, the employee has to decide if the visitors are having a negative effect on the patient. The employee must then decide how and when to limit the visitors.	4.40	1.35	3.70	1.34	2.01*
3 F	When patients get upset or angry, or lodge a complaint (for example, because they feel they are not getting proper care), they must be calmed down.	4.67	1.83	3.37	1.56	2.96**
4 F	Frequently, there is a need to explain things to patients. They frequently explain the nature of tests and the reasons for them; they also must give information about aftercare planning, dietary habits, procedures for giving shots, etc.	4.97	1.38	3.93	1.44	2.84**
5 F	There is a responsibility to share relevant information about patients. These employees pass such information on to other shifts, to other team members, to orderlies and technicians, and so on.	4.30	1.29	3.43	1.25	2.64*

Note: All job activities appear as they did when they were rated for masculinity and femininity.

*$p < .05$

**$p < .01$

Table 2

Bivariate Correlations Between Measures of Masculinity, Femininity (as Continuous Variables), and Job Performance Ratings

Job Performance Ratings	Masculinity (Continuous Variable)	Femininity (Continuous Variable)	N
Masculine Job Activities			
1 M	.18*	-.05	133
2 M	.20*	-.08	126
3 M	.12	-.09	130
4 M	.19*	.00	134
Feminine Job Activities			
1 F	.09	.00	127
2 F	-.04	.07	134
3 F	.05	.04	129
4 F	.14	-.01	132
5 F	.14	.01	134

*$p < .05$

Note: The statistics for each job activity were calculated using listwise deletion for missing data. N's are presented.

Table 3

Multiple Regression for the Prediction of Job Performance Ratings from Masculinity, Femininity (as Continuous Variables), and the Cross Product

Job Performance Ratings	Step 1 Variable/R	Step 2 Added Variable/R	Step 3 Inclusion of Cross Product	N
Masculine Job Activities				
1 M	Masculinity/.18*	Femininity/.19	.19	133
2 M	Masculinity/.20*	Femininity/.22	.23	126
3 M	Masculinity/.12	Femininity/.16	.16	130
4 M	Masculinity/.19*	Femininity/.19	.19	134
Feminine Job Activities				
1 F	Masculinity/.09	Femininity/.09	.14	127
2 F	Femininity/.07	Masculinity/.08	.16	134
3 F	Masculinity/.05	Femininity/.06	.10	129
4 F	Masculinity/.14	Femininity/.14	.14	132
5 F	Masculinity/.14	Femininity/.14	.15	134

*$p < .05$

Note: The statistics for each job activity were calculated using listwise deletion for missing data. N's are presented.

Table 4

Bivariate Correlations Between Masculinity, Femininity, Androgyny, and Undifferentiated (as Typology Variables), and Job Performance Ratings

Job Performance Ratings	Masculine (Typology)	Feminine (Typology)	Androgynous (Typology)	Undifferentiated (Typology)	N
Masculine Job Activities					
1 M	.15	-.21**	.15	-.09	133
2 M	.14	-.22**	.15	-.07	126
3 M	.06	-.26**	.17*	.02	130
4 M	.15	-.18*	.18*	-.13	134
Feminine Job Activities					
1 F	.13	-.14	.04	-.02	127
2 F	-.10	.03	.13	-.07	134
3 F	.04	-.06	.05	-.03	129
4 F	.17*	-.13	.06	-.08	132
5 F	.16	-.12	.06	-.09	134

*$p < .05$

**$p < .02$

Note: The statistics for each job activity were calculated using listwise deletion for missing data. N's are presented.